The Daedalean

Semper Discens

Monthly Aerospace Education Publication of the Connecticut Wing of the Civil Air Patrol

Stephen M. Rocketto, LtCol., CAP
CTWG Director of Aerospace Education
srocketto@aquilasys.com
Art Dammers, Maj. CAP
CTWG Internal Aerospace Education Officer

Volume VI, Number 11 *November, 2013*

The Daedalean is temporarily serving as the CTWG news periodical. We are searching for a new CTWG PAO Officer who will accept the responsibilities of the office. We also would appreciate any suggestions for a title for a new CTWG newsletter or magazine. In the interim, squadron PAOs should send items of interest to srocketto@aquilasys.com.

SCHEDULE

09-10 NOV-CLC Course-Camp Niantic
16 NOV-Cadet Rifle Safety and Marksmanship
22 FEB-Wing Wide SAREX-HFD
29 APR-Wing Wide SAREX-GON
16 JUN-Tri-State SAREX (CT/RI/MA)
23AUG-Wing Wide SAREX -HFD

SQUADRON AEROSPACE NEWS

Silver City Cadet Squadron-Meriden

submitted by
Capt Oran Mills

Sixteen North Branford Boy Scouts attended the meeting on 14 October. They were assisted in completing many of the requirements for the aviation merit badge.

A highlight of the evening was the Cessna 172 preflight demonstration and the opportunity to sit in the aircraft, move the controls, and discuss the instruments.

On 28 October, after PT, LtCol Rocketto presented a one hour aerospace education lesson on the applications of Newton's Laws of Dynamics to aircraft and rockets.

Cadet Chadukiewicz experiences the delights of gyroscopic stability.

Royal Charter Squadron-Hartford

On 18 October, Maj Heather Murphy passed command of the Royal Charter Squadron to LtCol Anthony Cihocki. The ceremony was attended by a number of Wing Staff and family members.

LtCol Rocketto presented a one hour aerospace education lesson on the applications of Newton's Laws of Dynamics to aircraft and rockets.

399th Composite Squadron-Danbury

submitted by
Capt Peter Milaro, PAO

Members of two Civil Air Patrol squadrons from Western Connecticut Group participated in a field training exercise conducted at Danbury Municipal Airport to increase the number of qualified ground team members for search and rescue activities.

Fifteen Civil Air Patrol cadets and officers from the 399th Danbury Composite Squadron and 801st New Fairfield Cadet Squadron attended the event

and received ground team member and urban direction finding training. Instruction was hands on with participants actively carrying out the skills they learned in a series of challenging exercises.

Training was conducted by 399th staff. Major Jim Vigar conducted the safety briefing, taught map reading and how to conduct a ramp search by stepping off frequency with a hand held radio. Major Glen Dains instructed participants on how to determine bearings to a distress beacon utilizing the L-Tronics Little L-Per and how to deactivate a beacon. Captain Drew Teichman then reviewed

compass and map navigation, signal triangulation, and gear requirements, among other topics. Second Lieutenant Jeff Jenkins instructed participants in proper radio communication procedures and how to properly inspect a vehicle.

Officers and cadets working with map and compass.

Although some personnel still need to complete more tasks, they are a small step away from being fully qualified ground team members. Upcoming squadron training, scheduled for November 2, 2013 at 399th Squadron Headquarters, offers the opportunity for additional training and completion of specialty qualifications.

Thames River Composite Squadron-Groton
submitted by
SM Douglas Corrigan

The Squadron set up an information and recruiting booth at the Groton Fall Festival on 12 October. Ten cadets and six officers manned the station.

Information of CAP was passed out, questions were answered, and the recently constructed TRCS Hover Seat was "flown." Cadet rockets were also displayed and a computerized program featuring CAP activities was run in a repeating loop.

Aerospace education featured an ongoing study of the moon. Cadets observed the moon through a 125 mm telescope and key features were discussed. On a second night, the moon's real motion around the earth and its apparent motion in the sky were explained and cadets were tasked with observing the moon over the next week to verify what was learned.

WING AEROSPACE EDUCATION OFFICER POSITION OPEN

The position of External Aerospace Education Officer is open to a qualified applicant. The applicant will be expected to complete duties assigned by the Wing Aerospace Education Officer: The candidate must

• Complete the Yeager Award or be working on completing it.
• Enroll in the AEO 215 Specialty Track or have completed it.
Duties may include the following:
• Direct the external aerospace education program.
• Recruit Aerospace Education Members (AEM) into CAP.
• Support AEMs with visits to their classrooms and by conducting aerospace education activities.
• Encourage AEMs to participate in the voluntary Aerospace Education Excellence Program.
• Encourage AEMs and other CAP teacher

members to participate in the Fly-a-Teacher Program.
• Promote and assist with aerospace education projects such as workshops and seminars.
• Promote CAP aerospace education programs and educational materials in schools.
• Promote CAP's external AE mission to the regular uniformed CAP members.
• Establish and maintain contact with educational agencies promoting CAP AE products.
• Present AE lessons and activities in many different educational settings.

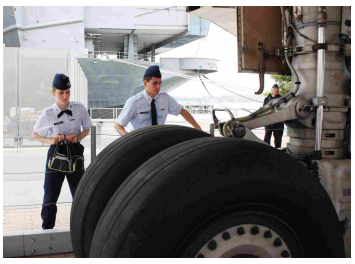
AWAY ALL BOARDERS!

CTWG Visits the Intrepid Air and Space Museum

Nineteen cadets and seniors from five squadrons and boarded the CVS-11, the USS Intrepid, home of New York City's Air and Space Museum, on the 19th of November. The trip was planned and directed by Maj Art Dammers, CTWG Internal Aerospace Education Officer.

Capt Sami Sami Steigmann, Commander of NYC's Phoenix Squadron joined our group and served as guide and docent.

Steigmann makes a point to the assembled CTWG Capsters.



Cadets Poe and Conway study the Concorde's massive main landing gear.
(photo by Maj Borque)

The first part of the day was spent touring the aircraft carrier. The Intrepid's forward flight deck is packed with a wide variety of mostly naval aircraft. The aft end of the flight deck supports a large hangar which houses the 'space shuttle" Enterprise.

CV-11-The large hangar for the Enterprise is visible aft.

Enterprise was built without engines and served as an atmospheric test vehicle. The intent was to refit it as an orbital vehicle but design changes proved too difficult so here entire service career was devoted to atmospheric flight testing.

The hangar deck of the Intrepid houses a number of aircraft and a wide range of exhibits which focus on its career, from mid-World War II in the Pacific to cold-war anti-submarine patrols to a recovery vessel for Mercury and Gemini manned space missions.

In addition, portions of the island were open to visitors as were berthing and messing areas.

Sharing wharf space with the Intrepid were a BAC-Aerospatiale Concorde and SS 577, the USS Growler.

Unfortunately, the interior of the Concorde is not regularly open for inspection by visitors.

The Growler is a Greyback Class diesel powered submarine which is outfitted to carry and launch the Vought Regulus cruise missile. The Greyback is open and many of the Capsters took the tour and marveled at the close quarters "enjoyed" by the submarine sailors.

The Growler displays a Vought Regulus I missile in launch position.

Thames River's 2dLt Simpson commented that she " ...thoroughly enjoyed the trip. It was a great way to learn a lot about about how aircraft carriers

operate and especially about the crew members and their part aboard this huge vessel. I think my favorite part was the space shuttle exhibit. The whole day was a great experience."

AEROSPACE HISTORY

Foreign Aircraft on the Intrepid

The flight vehicles displayed at the Intrepid Air & Space Museum are almost, without exception, US Navy models built by US manufacturers. The exceptions are an Army Bell UH-1 Iroquois, NASA's STS Enterprise, Lockheed's CIA flown A-12, and a Soviet TMA-6 Soyuz Capsule In addition there is a a cluster of five aircraft of foreign manufacture, two of which have US Navy or USMC ties. Each of them have interesting stories.

The first of the quintet is an AerMacchi MB-339. The Italian aircraft is powered by two British

Rolls-Royce Viper engines and is a popular training airplane flown or having been flown by at least 11 different air forces and a Florida defense contractor, Draken International.

The display aircraft bears the livery of the Italian AF aerobatic team, Frecchi Tricolori (The Tricolor Arrows).

Two of the aircraft are of Soviet design. One is a Polish built MiG-17, NATO codename Fresco, which bears the camouflage patterns of the North Vietnamese Air Force. The MiG prefix stands for the name of the two designers, Mikoyan and Gurevich. The Chinese license built version is known as the J-5. Some 11,000 were built and served or are serving in the air forces of 41 nations.

The second Soviet aircraft is another Polish built fighter, the delta winged MiG-21 Fishbed. This type has had a 35 year production run and has had more variations produced than any other supersonic aircraft, serving or having served in about 50 different air forces.

After the break-up of the Soviet Union, Poland allied itself with the West. NATO would sponsor military exercises called Tiger Meet in which combined forces would be assigned a wide range of combat scenarios. The attractive decorations on the Intrepid's MiG-21 symbolized one such exercise and also bears a Polish red and white checkered fin flash.

French naval aviation is represented by a Dassault Entendard IV M. The French name means "battle flag," the "IV" indicates that this is the fourth variation of the aircraft, and the "M" is the letter used to denote the navalized version.

This aircraft was the first French built carrier strike aircraft and its upgraded version, the Super Entendard, was flown by the Argentine Navy in the Falklands-Malvinas War and successfully deployed the Exocet missile agains the British fleet. They were also used by Iraq against Iran in

the 1984 of their war.

Two or the other aircraft have been used by the US military. The British Aerospace AV-8C Harrier has been supplied to the USMC. These were part of

the Marines original purchase of the Mk 1 which were designated AV-8A. McDonnell-Douglas upgraded the many of these original aircraft with new engines, electronics, and service life extension modifications and they became the "C" model.

On of the originators of the design, which was originally developed by Hawker Aircraft was Sir Sidney Camm, designer of the World War II Hurricane.

The second aircraft was used by both the Navy and the USMC under the designation F-21. This is the Israeli Aircraft Industries Kfir (Lion Cub). US forces used it for dissimilar air combat training (DACT). DACT is an exercise which pits opposing aircraft against adversaries who have different flight characteristics.

The delta winged F-21 was supersonic, possessed high accelerations but were not agile. Their flight characteristics bore some resemblance to those of the Soviet MiG-23 which was a likely adversary to US forces. The Navy based theirs at Naval Air Station Oceana and the Marines staged their aircraft from Marine Air Station Yuma. A government contractor, Airborne Tactical Advantage Company at Newport News also flies the Kfir for some military programs.

The development of the aircraft is unusual. The French embargoed the sale of arms to Israel to appease Moslem countries and refused to deliver 50 Mirage IIICs which had been paid for. The Israelis, whose air force was based on French designs, built an unlicensed version of the Mirage IIIc which they called the Nesher. The design details had been obtained by espionage.

Loss of the "French Connection" led the Israeli government to strike a deal with the United States and before long, their entire combat fleet was of US manufacture.

But, in the interim, Nesher was then upgraded with superior Westinghouse J-79 engines and Israeli electronics and airframe modifications. This became the Kfir. Its operational history as an air superiority fighter was short since F-4s, F-16s, and F-15s soon took over that role and the Kfir became a strike aircraft.

The US has approved sales to three other nations: Columbia, Ecuador, and Sri Lanka. There are also some recent plans to offer upgraded models on the international arms market but the use of US engines makes US approval necessary.

The last of the foreign aircraft at the Intrepid is the British Aerospace-Aerospatiale Concorde. The plane is displayed on the western edge of the pier rather than the flight deck.

The classic ogive shape of the Concorde wing is evident even in this front quarter view.

SEPTEMBER RIFLE SAFETY AND MARKSMANSHIP PROGRAM REPORT

Twelve cadets from two squadrons met at the Quaker Hill R&G Club on September 28 to learn about rifle safety and earn Winchester-NRA medals. The cadets represented Danbury's 399th Composite Squadron and Groton's Thames River Composite Squadron.

Cadet and coaches gather after last relay for group photo. *(photo by SM Waldron)*

After a safety briefing and instruction in the prone position, sling adjustment, breathing, and trigger control, the cadets fired five relays from the prone position. Each relay consisted of 25 shots fired at 50 yards on the A-23 target.

Every new shooter qualified at the marksman level. Two advanced shooter completed targets for sharpshooter and sharpshooter bar nine.

The Danbury cadets were accompanied by LtCol Sandy Sanderson who also served as an instructor assisted by Capt Greg Sweeney. SM Brian Waldron drove and served as photographer. Col Sanderson, an NRA instructor and Capt Sweeney, a former USMC helicopter pilot were part of the instructional staff.

The Groton Cadets were led by Lt David Meers.

2dLt Timothy Plourde, USAF, a former TRCS cadet and Montville High School Rifle Team member, who earned the NRA Distinguished Expert and Hap Rocketto, a national record holder, formerly of the US National Guard Rifle Team, also served as instructors and scorers.

LtCol Stephen Rocketto was Chief Range Officer and Lead Instructor.

OCTOBER RIFLE SAFETY AND MARKSMANSHIP PROGRAM REPORT

21 cadets from Danbury, Stratford, Meriden, and Groton attended the second Wing rifle training session this year.

The cadets fired fifty rounds over the fifty yard outdoor course at Quaker Hill Rod and Gun Club. Conditions were chilly and windy.

A cadet in the prone position is assisted by Sgt Hoffman.

Two thirds of the cadets achieved NRA medals. Cadet Michael Hollingsworth of Thames River reached the sharpshooter level.

Marksman First Class was earned by Cadets Walden and Stillman from Danbury, Bouchine and Chadukiewicz from Stratford, and Johnstone, Jaskiewicz, and Daniel Hollingsworth from Groton.

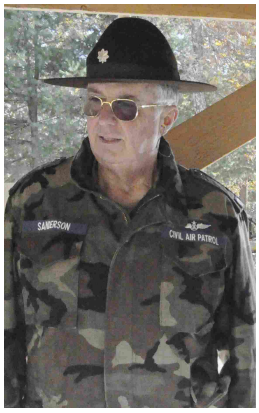
Six cadets reached the Pro-Marksman stage: Cadets Doolittle, Sullivan, and Cooper from Meriden's Silver City and Hammer Peers, and Hansen from the Stratford Eagles.

The remaining cadets all completed part of the Pro-Marksman stage of the qualification course.

LtCol Stephen Rocketto served as Chief Range Instructor and was assisted by Quaker Hill coaches Ryan McKee and Nash Neubauer. LtCol Peter Sanderson from Danbury was Range Safety Officer.

LtCol Sanderson observes safety procedures.

Lt LaVoie assists a Stratford cadet.



Additional coaching, supervision, and range assistance was provided by 1stLts Ashley LaPlante and Jay Lavoie and M/Sgt Paul Patnoad and T/Sgt Jim Hoffman from Meriden, Capt Kenneth Fortes and SM Roberto Cremer from Stratford, and 2dLt David Meers from Thames River.

The last event of the year is set for 16 November.

The article following states the dates and details of the next Cadet Rifle and Safety Marksmanship event.

CADET RIFLE SAFETY AND MARKSMANSHIP PROGRAM

Date: 16 November

Time: 0800-1400

Place: Quaker Hill Rod and Gun Club, Oxoboxo Dam Rd., Oakdale, Ct.

Uniform: BDUs

Paperwork: Each cadet should submit a Form 161 and a copy of the CAP Rifle Waiver (attached). The senior officer from each squadron is responsible for collecting and maintaining these documents..

Equipment and Supplies: All necessary equipment, targets, and ammunition will be supplied. Participants should bring hearing protection and safety glasses if they own them. If not, they will be provided. Prescription glasses are equivalent to safety glasses.

Firing Plan: Cadets will fire in alternate relays of at a range of 50 feet. Twenty five shots will be fired in each half hour relay.

Cost: free-supported by Connecticut Friends of the NRA and the Quaker Hill Rod and Gun Club

Squadrons must supply their own transportation.

The firing line is protected by an overhead shelter but heavy rain may prevent outdoor firing. If this occurs, we will move to the indoor 50 foot range.

Cadets who participate may qualify for NRA medals which they can wear with their blues.

In order to give all squadrons and cadets an equal chance to participate, the following guidelines are established:

A session can accommodate 30 cadets, 15 shooting on alternate relays.

Preregistration is required.

November 16 (cut-off date is 02 November)

Participation is on a first come, first serve basis.

Send your reservations and approximate number of attendees to srocketto@aquilasys.com.

QUALITY CADET UNIT AWARD

Col Kenneth Chapman, Wing Commander, encourages every squadron to meet the standards which earn a Quality Cadet Unit Award. The new award cycle is underway and it ends in September of 2014. Every unit with 10 cadets or more is eligible to enter. To qualify, a squadron must meet five of the following nine criteria:

1. Adult Leadership: Unit has at least 3 Training Leaders of Cadets graduates on its roster

2. Aerospace: Unit earned the Aerospace Excellence Award (AEX) during the year

3. Cadet Achievement: 40% of cadets on roster have attained the Wright Brothers Award

4. DDR Participation: 20% of cadets on roster have completed DDRx or unit participated in RRLA

5. Encampment: 50% of cadets on roster have completed encampment

6. Enrollment: Unit has at least 35 cadets listed on its roster

7. Growth: Unit's cadet roster increased by 10%, or 10 cadets

8. Orientation Flights: 60% of cadets on roster have participated in at least 1 flight

9. Retention: Each unit must retain 40% or its members from the previous year.

A complete description of the program may be found at:

http://www.capmembers.com/cadet_programs/library/quality-cadet-unit-award/

In 2012-2013, three CTWG squadrons earned the award: the Stratford Eagles, the 399th Composite Squadron and the 186th Composite Squadron.

THE AEX AWARD

One criterion for earning the Quality Cadet Unit Award is to earn the Aerospace Excellence Award (AEX).

The program requires a squadron to complete six aerospace activities or science/ technology/engineering/mathematics activities from one of the AEX manuals or supplementary CAP manuals such as Robotics or Radio Controlled Aircraft or Astronomy. Then engage in a two hour activity such as a rocket launch or field trip.

AEX is a first class enrichment program for any squadron. The cycle for this award has just started so squadrons have a year to qualify, apply, and receive a handsome award plaque.

During the last year, the following CTWG squadrons earned the AEX Award: the Stratford Eagles, the 169th Composite Squadron, Northwest Hills, Thames River Composite Squadron, New Fairfield 801 and New Fairfield 802 and the 143 Composite Squadron.

For further information, go to:

http://members.gocivilairpatrol.com/aerospace_education/internal_specific/

THE YEAGER AWARD

CAP has three missions; Emergency Services, Cadet Programs, and Aerospace Education. One of these missions, Aerospace Education, is a duty of every member. Whether it be personal, internal to CAP, or external, promulgating the message of aerospace to the greater community, each member ought be engaged.

Earning the Yeager Ribbon requires that an officer take a 100 question open-book test based upon material in the book, *Aerospace (The Journey of Flight)*. The book is available on-line and in many squadron libraries. It's 26 chapters parallels the six volumes of the cadet's *Aerospace Dimensions*

and covers topics in aviation history, general and commercial aviation, astronomy, space exploration, meteorology, and the physics of flight.

At last count, sixteen CTWG officers earned the award in the last year and 47% of our officers hold the award.
For further information, go to:

http://members.gocivilairpatrol.com/aerospace_education/awards/yeager-award/

FREE MAGAZINES

Each month, the Aerospace Education Department places a varied collection of pertinent and current magazines on the table outside of the main office and to the left of the restroom door at headquarters. Squadron commanders are urged to take some of these back to their units for distribution of cadets and officers.

The magazines include *Aviation Week and Space Technology, Flying, Air Force, US Naval Institute Proceedings, Naval history, AOPA Pilot, and the Sport Aviation, Air Force Magazine, and Smithsonian Air and Space Magazine* to name just a few.

WRITING AN AWARD NOMINATION LETTER

Each year, squadron members should consider nominating a fellow officer or cadet for a CTWG or national CAP award. These awards are offered for practitioners in almost all specialty tracks. Some are categorized as "officer of the year." Others are for lifetime achievement. Others might be for extraordinary performance. They can be for an individual or for a unit. Whatever they might be for, the require a nomination letter.

CAP encourages this program. Members are volunteers and a plaque, a certificate, a medal or a ribbon are meaningful recognitions or achievement or special services, a way of saying "thanks" or congratulations.

A good letter of nomination has three parts: the opening statement, a description of the meritorious act or performance which should include specific examples, and a closing statement.

The nomination must be submitted on the appropriate form and before the date on which nominations close.

CAP has produced an on-line document which covers this process in great detail, provides suggestions as to proper phraseology, and suggests ways to improve a nomination. This document is available at:

http://members.gocivilairpatrol.com/media/cms/P039_003_F66823F4021E0.pdf

Get it, read it, and start thinking about whom you wish to nominate in the upcoming award cycle.

AEROSPACE CURRENT EVENTS

Flying Yankees Get First Herky

Last Tuesday, a new chapter in the history of the Connecticut Air National Guard was started with the arrival of a Lockheed C-130H Hercules at its Bradley Airport base.

The aircraft is the first of eight which are assigned tot the 118th Air Lift Squadron of the 103rd Airlift Wing. The Hercules will replace the Lear C-21A currently flown.

Out with the old and in with the new!

Before regular flight operations commence,

months of training are required to provide the infrastructure needed to support the aircraft. A team of maintenance technicians from the Kentucky Air National Guard will train local airframe and power plant maintainers to keep the aircraft airworthy.

Some pilots, navigators, flight engineers, and loadmasters are currently being trained at the C-130 Schoolhouse at Little Rock AFB. Others may need to be recruited.

Sailplane Planned to Reach Stratosphere!

One of the most interesting aeronautical ventures currently in the planning stage is the construction of a pressurized sailplane intended to fly in the stratosphere—90,000 feet MSL!

The putative goal is to build a vehicle capable of studying the chemical properties of the stratosphere, especially ozone. Incidentally, a new world altitude record would be established.

The aircraft is under construction at Windward Performance in Bend, Oregon. Named the Perlon II, it is the successor to the Perlan I which set the absolute altitude record for sailplanes, 50,671 ft MSL, seven years ago.

The concept was developed by Einar Enevoldson, a former NASA test pilot, who piloted the Perlan One to its record with Steve Faucett. Enevoldson is 81 years old and has been flying gliders for seven decades. This experience in finding lift is what he is banking on to climb 17 miles high.

The plan is to tow the aircraft to 10,000 feet over a selected site in the Argentine Andes near El Clafate, the same location in which the previous record was established.

The conditions needed to obtain the necessary lift is the formation of a standing wave over the ridge line. When high speed winds blow over a ridge line, a standing wave may be created, often marked by a lenticular cloud. The wave weakens around 60,000 feet but at that altitude, season, and the latitude at which the flight will take place, it is then possible to fly into another meteorological phenomenon, the polar vortex, which will provide additional lift.

Lenticular Cloud Over Mt. Hood
(photo-credit: FoxNews12)

A major issue in the aircraft design is avoidance of what aviator's call “coffin corner.” The name refers to a point on the altitude vs. Mach number chart at which the stall speed and the critical Mach number are the same. The aircraft cannot fly slower than the stall speed and if it exceeds the critical Mach number, the wings lose lift due to flow separation and the formation of shock waves.

This is important because as altitude increases and air density decreases, the speed of sound also decreases. The Perlan II will be flying in a region where the speed of sound and the stall speed are nearly the same. Consequently, wind design must be managed to produce very high lift and very low drag, a pretty problem for an aeronautical engineer.

The high aspect ratio wings are very long and therefore have high bending moments. Therefore, the internal support structure must be strong and lightweight. It must also be thin to keep the wing profile thin. Carbon fiber composites will be used to achieve this goal.

Half the 7.5 million dollars needed to finish the project has been raised and the sponsors are seeking more financing to bring the enterprise to fruition.

Jumbos in the News

Airbus 380 Packing Plan

Russia's Transaero Airlines will take delivery of an Airbus 380 in 2015 and may set a record for the highest seating capacity of any passenger aircraft even.

The aircraft is planned for three classes of service. Imperial Class will contain 12 seats outfitted as suites. Business class will hold 24 passengers on full-flat seats with all-around access. And economy, sometimes knows as "sardine class," will provide "room" for 616 more passengers for a total of 652 seats.

A French carrier, Air Austral, based on the Indian Ocean's Reunion Island did plan an 840 seat version but financial difficulties may mean that the line may never take delivery.

At the low end of the passenger stuffing business, Korean Air will offer the most spacious A380 with a 407 seat capacity.

Boeing 747-8 Production Slowed

Boeing has announced that it will cut the fourth generation 747 production rate from 24/year to 18/year due to slow sales.

The 747-8 has a lengthened fuselage, redesigned wings, and more fuel efficient engines but it is engaged in a sales war with the Airbus 380 and Boeing's own 777.

The first of the jumbos, the 747 has been in airline service for 43 years. So far, 107 orders have been booked, freighter versions being he most popular, and about half are in line for delivery.

Cargolux and Nippon Cargo Airlines were the first in line for delivery of the 747-8 freighter. At last count, some 67 have been ordered and half have been delivered.

Boeing 747-8 in foreground at Spirit Aerospace in Wichita. Spirit builds sub-sections for Boeing aircraft. A Boeing Dreamlifter is visible in the background. The Dreamlifter is a converted 747-400 which transports large sub-sections of the new 787 Dreamliner from suppliers around the world to final assembly in Everett, Washington.

HURRICANES

by

Stephen M. Rocketto, LtCol, CAP

Hurricane season has arrived and these spectacular displays in which the earth seeks to achieve thermal equilibrium engenders both wonder and terror.

I can trace my fascination with hurricanes to 1954. The 1950's was a good decade for Atlantic hurricanes. In 1950, Atlantic hurricanes first received names using the military's phonetic alphabet: "Able, Baker, Charlie...." Three years later, the weather bureau switched to the use of female names. This new practice may have been suggested by George R. Stewart's 1941 novel, *Storm,* in which a meteorologist uses the name "Maria" to denominate a storm. During 1953 and 1954, a standard list of female names, "Alice, Barbara, Carol...", were used but in 1955, fearing confusion between storms in different years, six sets of names were established, to be repeated every six years. Names of notorious storms would be retired.

This system stayed in effect until 1979 when men's names were alternated with women's names. At present, the World Meteorological Organization's Western Hemisphere Hurricane Committee follow this procedure with the addition of names in French and Spanish since these languages are used in the North American regions oft threatened by hurricanes.

However, the early '50s were not a good period for New England. In the previous half century, only one major hurricane had struck the northeast, the legendary Hurricane of 1938. However, in 1954, Carol and Edna plowed into New England and in 1955, Connie and Diane caused massive flooding. These were some of the deadliest and most costly storms to ever strike. Diane was the first hurricane to cause a billion dollars worth of damage. Deaths caused by the four storms combined exceeded 200 souls. The probability of a major hurricane striking the Long Island Sound region is about twice per hundred years. Now, four had struck in a two year period. The death tolls cannot com pare to the 8,000 to 12,00 who died in Galveston, Texas in 1900 but it was a different time, the federal government took note, and a new era in hurricane research was financed by a nervous Congress, spearheaded by Senator Francis Green of Rhode Island.

At the time, most of this fascinating detail was not known to me, an 12 year old boy, with not an inkling of his own finitude and mortality. But as the summer of 1954 waned and the specter of school loomed, I followed the newspaper accounts in our local paper, *The New London Evening Day* detailing the approach of Hurricane Carol. As the storm moved closer, old timers reminisced about their 1938 experiences and accounts of that infamous storm were published in the local papers. Preparations were made. Boats were moved or double moored. Aircraft were flown inland. Homes fronting the sea had their windows boarded, water was stored in jugs and tubs, and not a loaf or bread, quart of milk, or egg were available from New Haven to Point Judith as people stocked their larders for the coming crisis.

When I went out on the roof of our back porch, I could, through a gap between the trees and houses, see the storm warning flags at the Coast Guard Moorings at Fort Trumbull. The small craft pennant was successfully replaced by various gale warnings and I anxiously awaited the appearance of the pair of square red flags with square black centers that announced a hurricane.

I had read that you could actually lean into the 64 kt winds of a hurricane and not fall over. I had also read about the huge waves generated by such a storm and what 12 year old boy could resist such a tempting surf. I had a date with a capricious lady named Carol.

My cunning mind knew that my mother would not go along with my plan to front nature's fury. Heck, she did not even like it if I wanted to gambol in a summer rain shower. The expedition had to be *covert* . I told her that I would make my storm headquarters in my room and follow the events on my old Hallicrafter shortwave. As the storm moved towards maximum intensity, I made my move. My mother was occupied with housewifely duties and the CBS radio soap operas as I slipped out the front door. I couldn't don my slicker and galoshes since they were kept in the back hall and she would see me so I just had my summer garments and my Brooklyn Dodger baseball hat for protection from the elements. The cold wind-driven rain lashed at me as I made my way down the hill, across Caulkins Park and the New York, New Haven, and Hartford Railroad lines to the waterfront along Pequot Avenue. What a sight! The storm surge has pushed the water up and over the Thames embankments and the street was flooded. Boats,

large boats, had been driven over the street and were now aground on the inland side. Piers were smashed and the strand of Green's Harbor Beach was submerged. I was impressed. Now I knew there was danger afoot. Mostly. I was worried about fallen electrical wires because my failed boyish experiments with electricity had already taught me about the invisible dangers of household current. What I did not ken was that rain was not the only substance which the wind drove through the air. At that point. I noted that various solid objects, tree branches, the components of boats, and household construction materials also seemed to be airborne. Mother Rocketto did not raise a complete fool.

I beat a hasty retreat along my original path. Reaching home, I peered through a window and noted that my mother was still in the living room with my younger brother and little sister, knitting and listening to the portable radio. Power had now been lost. Shivering from the cold and from fear of discovery, I surreptitiously entered the house and silently crept up the stairs to my room, utilizing all of the skills of stalking which I had learned in Cub Scouts. I quickly stripped my sodden garments and donned dry clothes. Unfortunately, for some reason, my mother had made a round of the house and noticed the trail of water which I had left from the front door, up the steps, and directly into my room. She was most unhappy with me. My punishment was extreme. She didn't *even* yell at me but just gave me that "I am disappointed with you maternal look" which mothers have mastered through the ages. And since I couldn't be trusted alone in my room. I had to sit in the living room with her, my younger brother and baby sister, help her wind yarn, listen to soap operas like "The Romance of Helen Trent" and "My Gal Sunday" and wait for my father to get home. What is worse, I realized that in my excitement, I had forgot to lean into the wind and see if its force would support me against the force or gravity.

Older and more prudent, today I eschew wandering about in hurricanes without my slicker and galoshes. And I have amassed a rich trove of second hand hurricane experiences by reading about them. One of the best general texts about hurricanes is the *Hurricane Watch: Forecasting the Deadliest Storms on Earth* by Dr. Bob Sheets and Jack Williams. Dr. Sheets is the former director of the National Hurricane Center in Miami and Jack Williams is the founding editor of the *USA Today Weather Page*. Both have long experience in tropical meteorology and communications and their book is a compendium of the history and current status of hurricane prediction. I particularly enjoyed their chapters on hurricane prediction models, the practical application of models to study Hurricane Floyd, and the future of hurricane predictions.

The mathematical prediction of weather phenomena is hampered by a number of factors. These include coarse resolution of the data field, the difficulty in acquiring data, more equations, I believe, than known variables, lack of sufficient computer power, and the fact that turbulence is once of the most complex problems in modern science. A noted specialist in quantum mechanics was once asked why he took up the problems of subatomic particles. He replied that the study of turbulence was too difficult. In the early days, pioneers like Irving Krick relied on statistical studies of past weather to make long term predictions. On the assumption that the future will resemble the past, they assembled data bases of past weather and tried to match the current situation to a similar one in the past. To a certain extent, this works. Warmer weather follows cold weather and wet weather follows dry weather as night follows day. However, the cost of evacuating a mile of coastline now tops a million dollars, lives are at stake, and, in our litigious society, the ramifications of bad forecasting may have legal consequences.

In order to the predict the track, time and place of landfall, and storm surge, a number of computer models have been created. As might be expected, many have clever acronyms for names. CUPER (CLimatology and PERsistence), a early statistical program, is a "Krick-like" model based upon the assumption that the storm will maintain its current velocity in the short-term, say 24 hours. After 24 hours, it will move in the same way as previous storms with similar climatological parameters. I have experimented with this myself and for well-behaved weather phenomena it works surprisingly well. However, hurricanes are like Monty Python's Spanish Inquisition and surprise is never far away.

THE WORLD SERIES
AN OCTOBER CLASSIC

World Series fever, the "October Classic," has ended with the Boston Red Stockings defeating the St. Louis Redbirds. Seventy years ago, in 1943, the St. Louis Cardinals were a contender, up against the New York Yankees, the detested rivals of their opponents this year, the Boston Red Sox.

Let us revert back to the thrilling days of yesteryear and recall the first game of another World Series, played in the midst of a World War, and the singular event that occurred in Yankee Stadium on October 5th, 1943.

The story, which was first published in the August/September, 1993 issue of *Air & Space Magazine* appears below by permission of the author.

OUTFIELD FLY

by

Hap Rocketto

The 1943 World Series had all the hallmarks of a classic. In a rematch of the previous year's antagonists, the St. Louis Cardinals would attempt to repeat their resounding win over the New York Yankees. The 1942 Cardinals had not been given much of a chance against the New York powerhouse, but with the batting of rookie Stan Musial and the pitching of Johnny Beazley they defeated a team that had won six league championships in seven years.

But the nation's war effort was gobbling up manpower at a prodigious rate. No one knew who might be playing ball in 1944, or if there would even be a 1944 season. It looked as if this might be the last great series for the duration of the war, which is why the first game drew over 68,000 fans to Yankee Stadium.

As the teams took batting practice and the pitchers warmed up, four Army Air Forces B-17 bombers were droning toward New York City on their way to combat bases in England. At the navigator's station of *Thru Hel'en Hihwater* [42-39785], sat my uncle, Second Lieutenant Harold Rocketto of Brooklyn. Second Lieutenant Jack Watson was the pilot; the other bombers were piloted by Second Lieutenants Robert Sheets, Elmer Young, and Joseph Wheeler.

Jack Watson Crew

(Back L-R) 2Lt Jack W. Watson (P), 2Lt John C. Doty, Jr. (CP)(POW), 2Lt Harold J. Rocketto (N) (KIA), 2Lt Vance Colvin(B)(KIA)

(Front L-R) Sgt William H. Fussner (RWG)(KIA), Sgt Fred H. Booth(BTG)(KIA), Sgt William H. Fussner (RWG)(KIA), Sgt Harry Romaniec (RO) (POW), Sgt Eugene R. Stewart (LWG)(POW), Sgt Samuel J. Rowland (E)(KIA)

Walla Walla, WA, 1943

As Rocketto, a Brooklyn Dodgers fan, scanned the landscape trying to pick out boyhood haunts in the

Bensonhurst section, the idle chatter on the intercom turned to the World Series. No one is sure what sparked the next move. Perhaps it was Rocketto's desire to seek revenge against the Yankees for their 1941 victory over the Dodgers. Then again, perhaps it was just the high spirits of young men facing a dangerous future. Whatever the reason, the fans at Yankee Stadium were about to be treated to an impromptu demonstration of the nation's bomber force.

As the aircraft crossed the Hudson River, the pilots headed for the Bronx and put the formation into a shallow dive. Picking up speed, the bombers thundered over Yankee Stadium in a low pass from home plate to center field. After they climbed out the B-17s wheeled about and circled the field while Watson returned for an encore. He cleared the upper-deck flagpoles by a mere 25 feet, prompting the Associated Press to later report that "an Army bomber roared over Yankee Stadium so low that Slats Martin could have fielded it." Watson then rejoined the formation and headed east.

"We knew we were heading for a combat zone and dropping in on the World Series seemed like a good idea at the time," Wheeler told a reporter months later. "The announcers must have thought it was part of the show because after we went over the first time we could hear them on the plane radio talking about the big Air Force review. We figured they were enjoying it so we turned around and came over a second time. We thought nothing about it until later when we found we had caused a sensation."

The B-17 pitches up to clear the outfield facade.

New York Mayor Fiorello LaGuardia**,** a World War I Army pilot, was watching as the bombers swooped overhead. La Guardia initially appreciated the panache of the young men, but admiration quickly gave way to his greater duty as mayor. Outraged, he burned up the phone lines to the Army Air Forces brass. "That pilot should be properly disciplined, endangering the lives of the citizenry of New York in that manner," he fumed.

When they landed at Presque Isle Airfield in Maine, Watson and the three other pilots were confined to quarters while court martial proceedings were undertaken. They were released a few days later when the Army realized it was foolish to keep four badly needed aircraft and crews out of combat because of a youthful indiscretion. "Besides," a general told Watson, "you and your crew will probably be killed anyway."

Five days after the buzzing brouhaha the four aircraft continued their journey to England, each pilot's military record heavier by a letter of reprimand and his wallet lighter by a $75 fine - no small sum to a second lieutenant back then.

Because of wartime news restrictions so tight that sports announcers were forbidden to comment on the weather lest the enemy pick up valuable intelligence, the buzzing incident went almost entirely unreported. The names of the crews were unknown to all but the authorities until three months later.

January 11, 1944, was one of the costliest days of air combat in history. Some 60 U.S. bombers were destroyed and more than 600 airmen were killed, wounded, or reported missing. On that terrible day. Watson, flying with the 303rd Bomb Group, single-handedly returned his badly shot-up and burning bomber to England. In a radio interview he brought up the stadium incident by voicing hope that the mayor of New York was not still sore at him. After hearing the interview, LaGuardia sent Watson a message: "All is forgiven. Congratulations. I hope you never run out of altitude. Happy landings. We'll be seeing you soon."

"Thank you, Mr. Mayor, and it can't be too soon for me." Watson replied, then added, "We'd sort of like to go back together some day and drop in on the Rose Bowl game."